

Figure 1. Examples of Functionalized Nucleotides

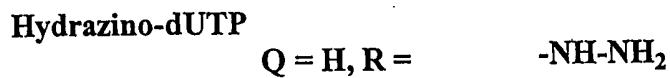
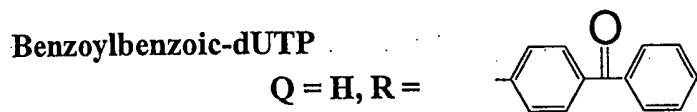
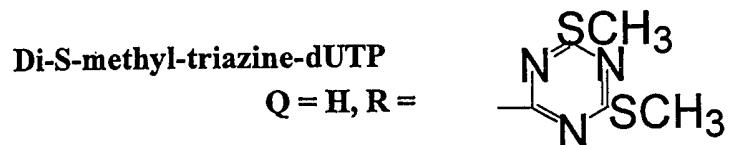
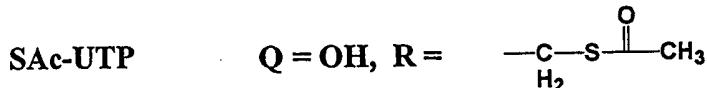
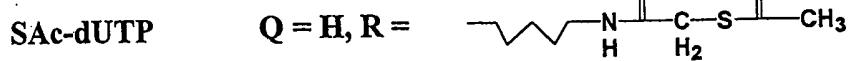
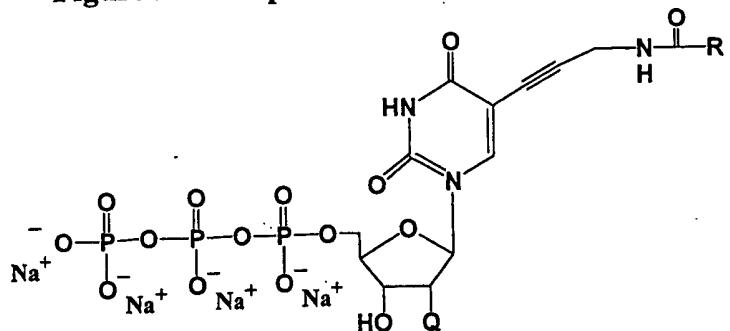


Figure 2: Exemplary linkers and points of attachment to the nucleobase

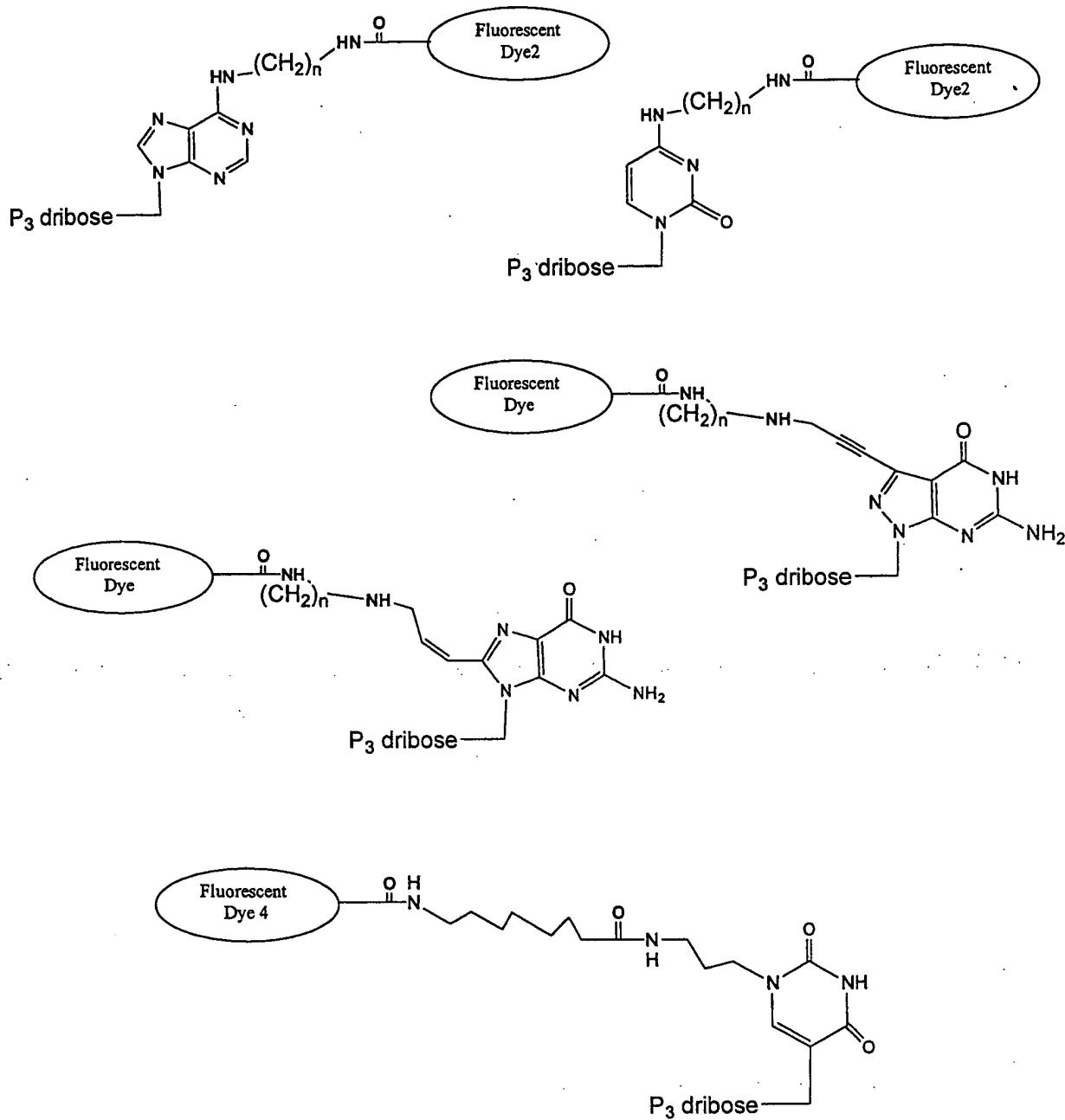


Figure 3

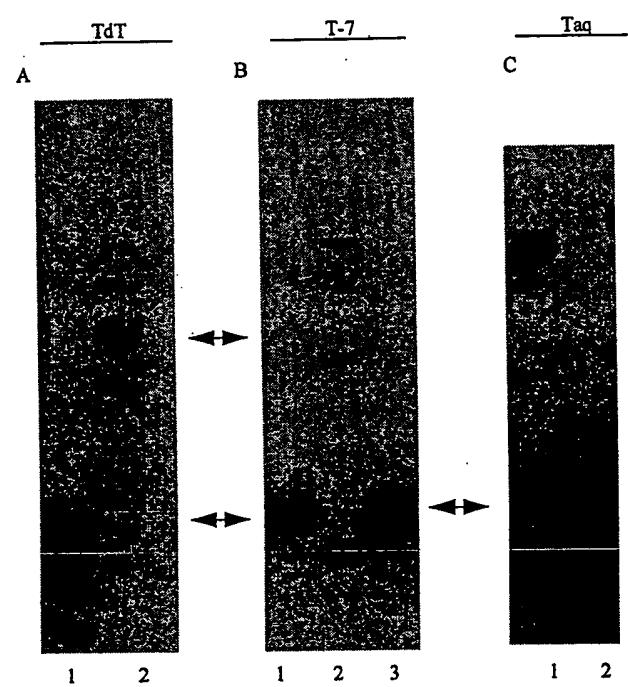


Figure 4

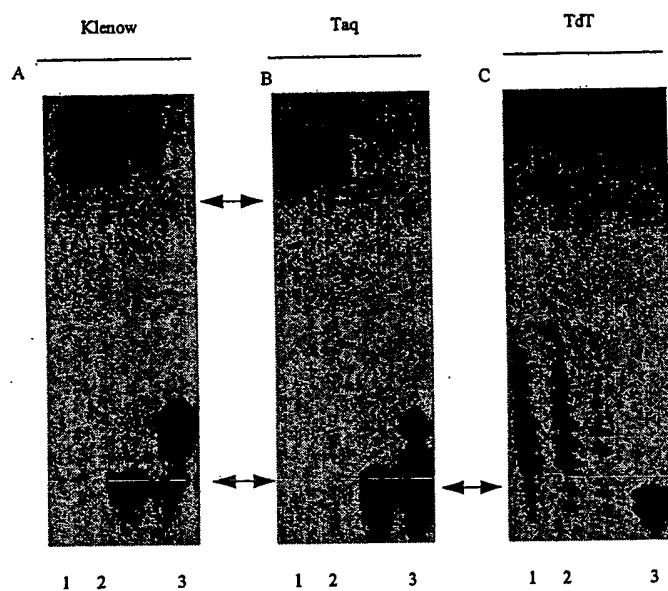


Figure 5

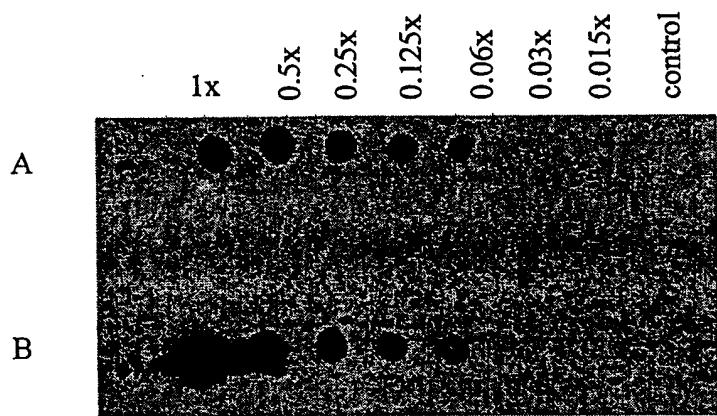


Figure 6

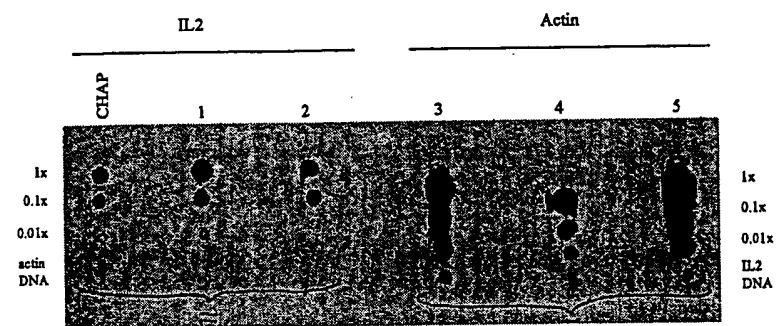


Figure 7

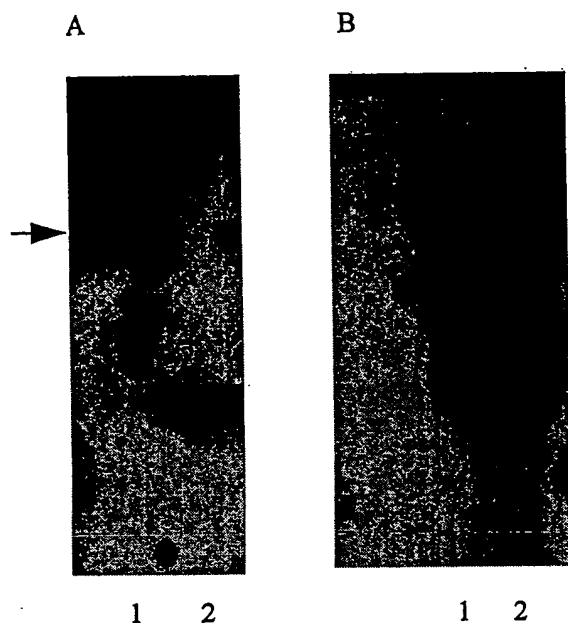


Figure 8

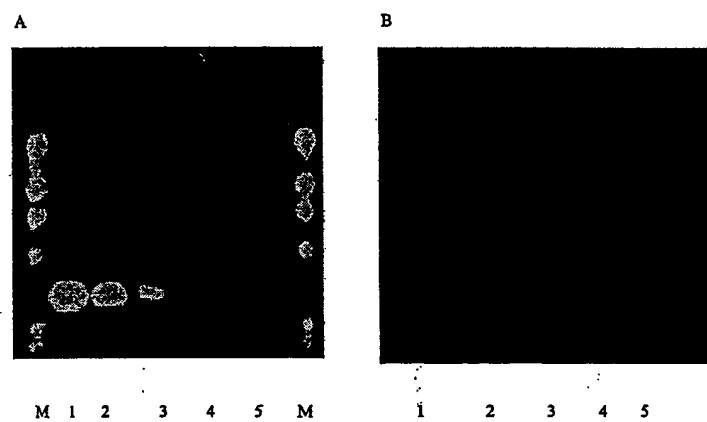


Figure 9
Synthesis of bis-methylthio-1,3,5-triazine

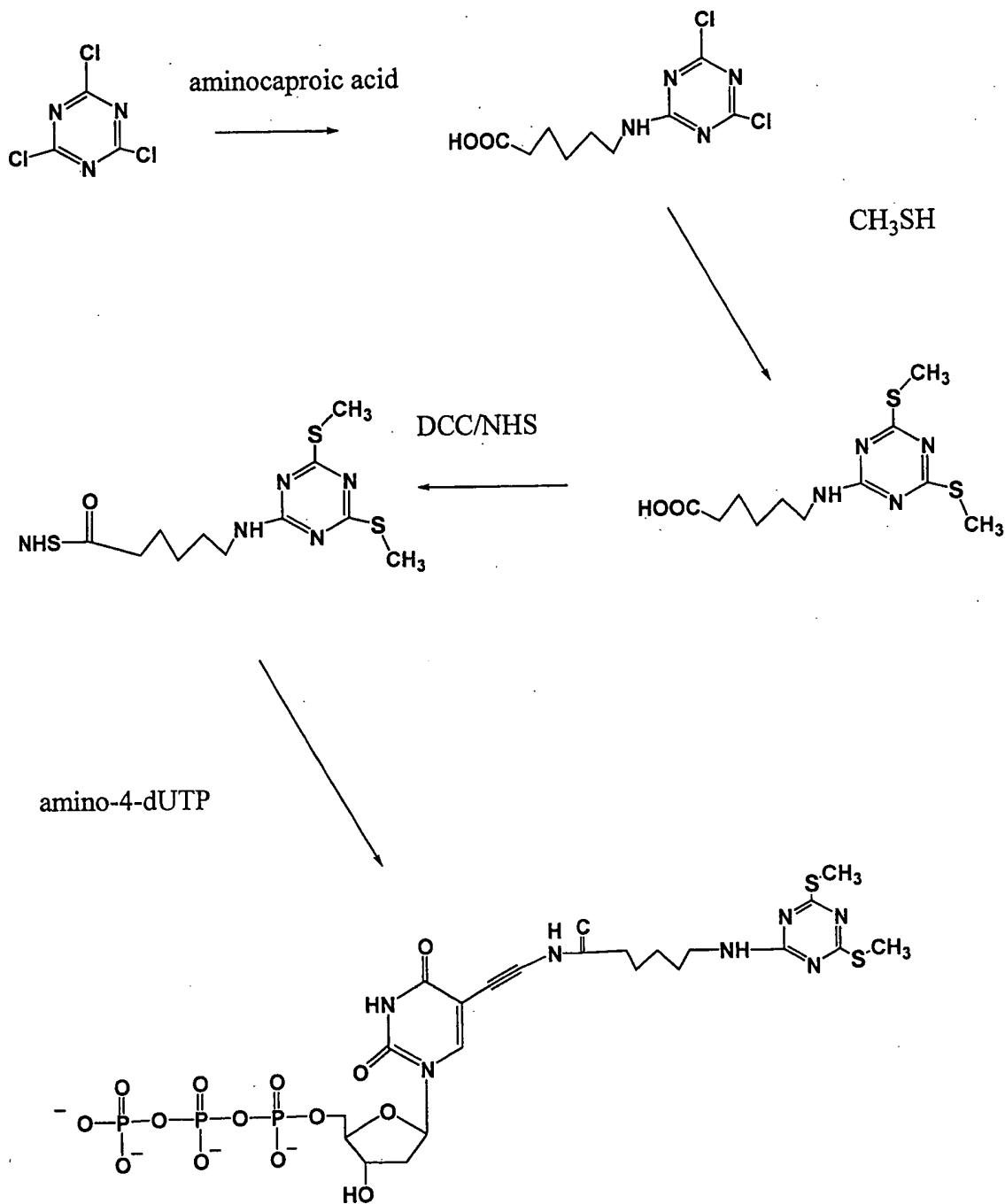
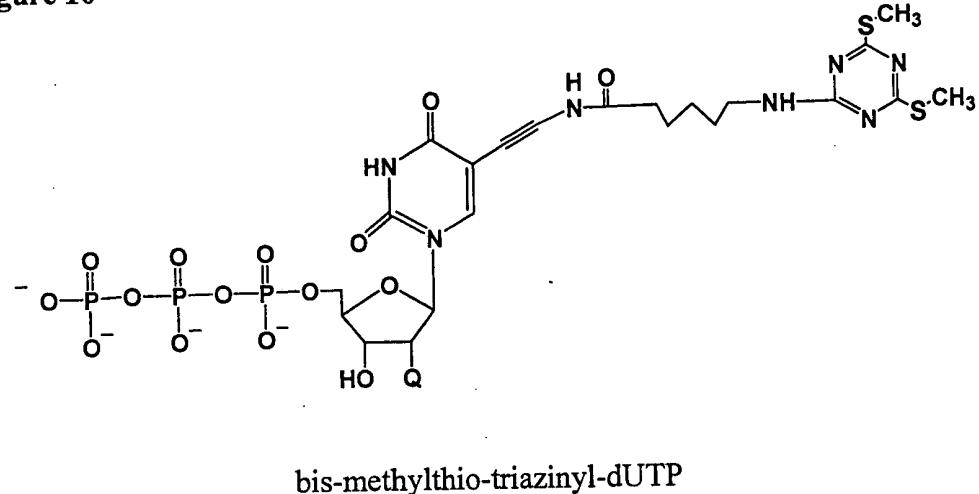


Figure 10



bis-methylthio-triazinyl-dUTP

Activation and coupling for methylthio-triazinyl-dUTP:

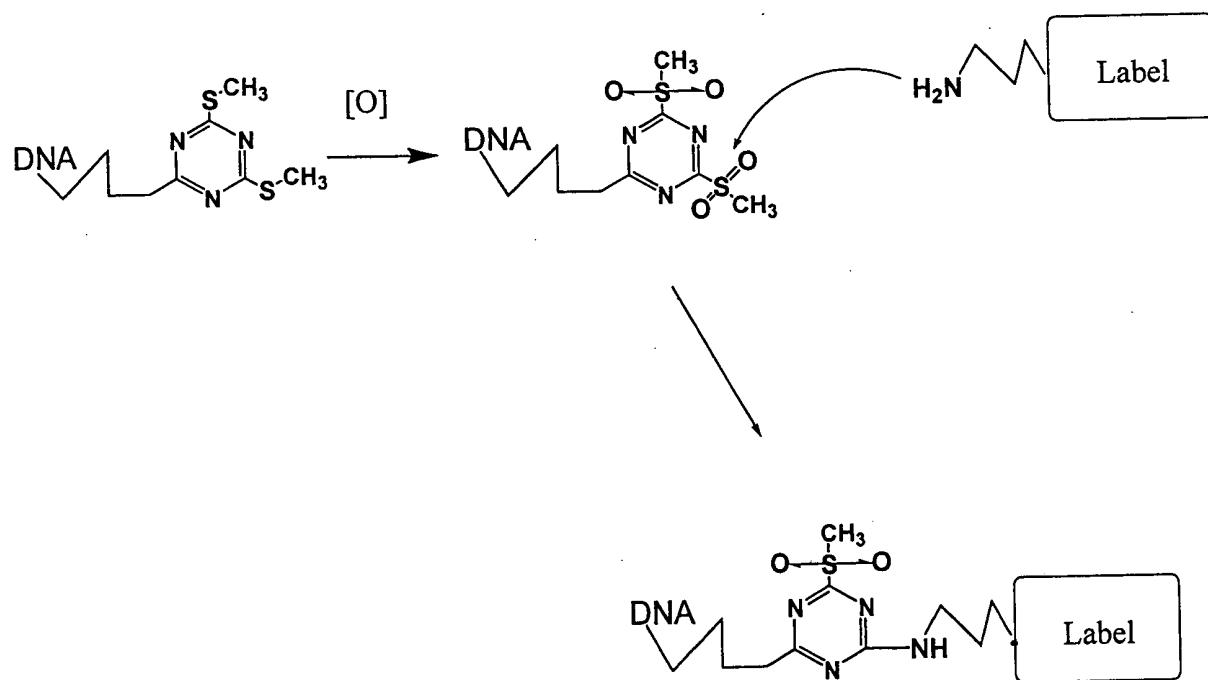
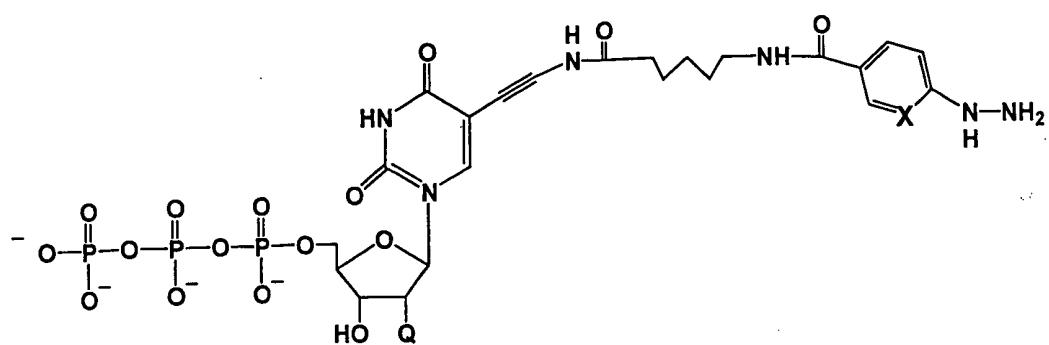


Figure 11



Hydrazino-dUTP

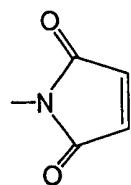
X = N **HN-dUTP (hydrazinoterephthalate)**

X = CH **HTP-dUTP (hydrazinoterephthalate)**

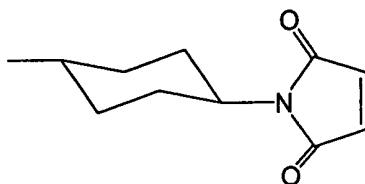
Figure 12

ADDITIONAL FUNCTIONAL GROUPS USED TO EVALUATE LABELING APPROACHES

Maleimidyl



Maleimido-methylcyclohexane (MCC)



Pyridine-dithioalkyl
(when n=2, Pyridine dithiopropanoate, PDP)

